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(54) EXTERNAL AGENT AND PLASTER FOR PREVENTING DROWSINESS

(57)Abstract:

PURPOSE: To provide an external agent and plaster for preventing drowsiness, giving excellent feeling in use and having prolonged activity.

CONSTITUTION: The drowsiness-preventing external agent is composed a drug component A consisting of L-menthol, dL-camphor and turpentine oil and a solvent mixture consisting of one or more film-forming compounds selected from cellulosic compounds (e.g. carboxymethylcellulose sodium and hydroxypropylcellulose) and vinyl compounds (e.g. polyvinyl alcohol and polyvinyl pyrrolidone), water and an alcohol at a water/solvent weight ratio of 0.7-4. The drowsiness-preventing plaster is produced by applying a tacky adhesive agent composition 1 composed of a tacky adhesive and a drug component B selected from L-menthol, dL-camphor, peppermint oil, etc., to a surface of a substrate and coating the coated surface with a tacky adhesive composition 2 consisting of a tacky adhesive and a drug component C selected from capsicum, cantharides, SHOUKYOU (rhizome of Zingiber officinale), turpentine oil, etc.

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* NOTICES *

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CLAIMS

[Claim(s)]
[Claim 1] Carboxymethylcellulose sodium, methyl cellulose, hydroxyethyl cellulose, Hydroxypropylcellulose, the hydroxypropyl methylcellulose, The coat formation compound 100 weight section more than a kind chosen from the group which consists of polyvinyl alcohol, a polyvinyl pyrrolidone, and a carboxyvinyl polymer, It consists of water and alcohol and this alcohol is the mixed solvent of ethanol, isopropanal PANORU, or ethanol and isopropanal PANORU. External preparations for sleepiness prevention characterized by consisting of a drug A70 with which water / solvent solvent becomes the solvent mixture 300 which are 0.7-4 in a weight ratio - a 10000 weight sections list from l-menthol, dl-camphor, and turpentine oil - the 220 weight sections.
[Claim 2] On one side of a base material at a binder 100 weight section list L-menthol, dl-camphor, The binder constituent 1 which consists of a drug B1 more than a kind chosen from the group which consists of peppermint oil, spearmint oil, and mentha oil - the 60 weight sections is applied. As opposed to this binder constituent 1 in a binder 100 weight section list Capsici fructus, cantharides, Patches for sleepiness prevention characterized by applying the binder constituent 2 which consists of a drug C0.05 more than a kind chosen from the group which consists of a ginger, turpentine oil, a nonylic acid WANIRIRU amide, and capsaicin - the 10 weight sections by 1 - 80% of surface ratio.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Industrial Application] This invention relates to the external preparations for sleepiness prevention, and patches.
[0002]
[Description of the Prior Art] When a drive, studying for an examination, etc. of Nighttime were performed, drowsiness attacked suddenly at a certain time, but since accident and the non-effectiveness of study were caused after falling asleep, when such, sleepiness needed to be stopped when drowsiness had attacked.
[0003] Although there is a method of putting the candy and gum containing the component which stops sleepiness as an approach of stopping sleepiness into opening, a candy is ineffective only while putting into opening, it is begun to chew gum and effectiveness has only enough extent. Moreover, although the method of making l-menthol hold to the base material of permeability at JP,3-28019,A, equipping an air-conditioning machine diffuser, and diffusing l-menthol indoors is proposed in order to lengthen the sleepiness prevention effectiveness, this approach is difficult to carry out easily individually.
[0004] The external preparations which used the l-menthol which has the sleepiness prevention effectiveness besides the above-mentioned approach are proposed. Although the stick type external preparations by S.T. Chemical CO., LTD. are marketed as such external preparations, since fats and oils, such as a higher fatty acid, a lanolin derivative, and paraffin, are the main raw materials, these external preparations are sticky into the applied part, have admiration, and are made very unpleasant.
[0005] Although the external preparations which added l-menthol to the film formation nature high molecular compound at JP,58-105915,A as external preparations which solve such a problem are proposed, it already hurts and there is no durability. Although the patches which carried out mixed addition of a sense-of-heat stimulant and l-menthol, such as capsici fructus, are indicated by JP,60-13710,A in order to solve this problem, in the patches by which mixed addition was carried out into the binder layer, each effectiveness rivals and sufficient sleepiness prevention effectiveness is not acquired.
[0006]
[Problem(s) to be Solved by the Invention] In view of the above-mentioned fault, this invention does not have the stickiness after spreading and aims at offering the lasting high external preparations for sleepiness prevention and patches excellent in a feeling of use.
[0007]
[Means for Solving the Problem] The coat formation compound used by this invention is a compound more than a kind chosen from the group which consists of carboxymethylcellulose sodium, methyl cellulose, hydroxyethyl cellulose, hydroxypropylcellulose, the hydroxypropyl methylcellulose, polyvinyl alcohol, a polyvinyl pyrrolidone, and a carboxyvinyl polymer.
[0008] Although especially the above-mentioned carboxymethylcellulose sodium is not limited, whenever [permutation / of a hydroxyl group] is the thing of 0.4-1.7 preferably, and it is the thing of 0.5-1.5 still more preferably.

[0009] Although especially the above-mentioned polyvinyl alcohol is not limited, whenever [saponification] is 78-98-mol % preferably. Moreover, the thing of 500-2500 has desirable polymerization degree.
[0010] Although especially the above-mentioned polyvinyl pyrrolidone is not limited, molecular weight is the thing of 10000-150000 preferably.
[0011] It may be added independently and two or more sorts of above-mentioned coat formation compounds may be added. Moreover, a coat formation compound may be used together with carboxy methyl ethyl cellulose, ethyl cellulose, an acetyl cel cellulose, polyvinyl TARUJIECHIRU ethylamino acetate, and acetic-acid monoglyceride.
[0012] The solvent mixture used by this invention is the mixture of water and alcohol, as alcohol, the mixed solvent of ethanol, isopropanol or ethanol, and isopropanol is used, and ethanol is used preferably. Moreover, a butanol and an acetone may be added.
[0013] Since a coat formation compound will stop being able to melt easily if the mixing ratio of water/solvent is too small, it is hard to dry and the water of the above-mentioned solvent mixture and the mixing ratio of a solvent are sticky after spreading when they are too large, they are 0.7-4 and are 1-3 preferably.
[0014] When adhesion will become high if too few, and there are too many additions of the above-mentioned solvent mixture, coat formation becomes less enough, and since the durability of effectiveness is lost, they are the 300 - 10000 weight section to the coat formation compound 100 weight section, and are the 450 - 3500 weight section preferably.
[0015] Although the drug A used by this invention is the mixture of l-menthol, dl-camphor, and turpentine oil and especially the ratio of the drug in mixture is not limited, l-menthol / dl-camphor + turpentine oil =3 / 5 - 7/3, dl-camphor / turpentine oil =3 / 4 are desirable. [7-4] Moreover, Drug A may add peppermint oil, spearmint oil, mentha oil, etc. if needed.
[0016] The above-mentioned turpentine oil is the essential oil which carried out steam distillation of ** or the balsam of Pinus (eleventh amendment Japanese pharmacopoeia explanatory, D-650) group variety vegetation, and obtained it.
[0017] Since too many additions of the above-mentioned drug A will produce a skin stimulus of erythema etc. if the sleepiness prevention effectiveness will not be acquired if too few, and there are, they are the 70 - 220 weight section to the coat formation compound 100 weight section.
[0018] The sleepiness prevention external preparations of this invention consist of the above-mentioned solvent mixture, a drug A, and a coat formation compound, and if needed, a phenol etc. may be added as a germicide and they may add additives, such as a glycerol, a polyethylene glycol, a butylene glycol, and propylene glycol, as a moisturizer.
[0019] The manufacture approach of the usual external preparations is used, for example, the manufacture approach of the above-mentioned external preparations puts a coat formation compound, solvent mixture, and Drug A into a SEBARA bull flask, carries out stirring mixing, and creates external preparations.
[0020] The obtained external preparations are applied to the perimeter of a frame and an eye, the tempora, etc.
[0021] A well-known binder can be conventionally used for the binder used by this invention 2, for example, an acrylic binder, a rubber system binder, and a silicone system binder are used suitably.
[0022] As an acrylic binder, the homopolymer of carbon numbers 1-18 and the alkyl (meta) acrylate preferably obtained from the fatty alcohol and the acrylic acid (meta) of 4-18, a copolymer, and the copolymer of alkyl (meta) acrylate and other functionality monomers are raised.
[0023] As the above-mentioned alkyl (meta) acrylate, butyl (meta) acrylate, isobutyl (meta) acrylate, hexyl (meta) acrylate, octyl (meta) acrylate, 2-ethylhexyl (meta) acrylate, iso octyl (meta) acrylate, DESHIRU (meta) acrylate, isodecyl (meta) acrylate, lauryl (meta) acrylate, stearyl (meta) acrylate, methyl acrylate, ethyl acrylate, etc. are raised.
[0024] As an example of the above-mentioned functionality monomer, the monomer which has a hydroxyl group, the monomer which has a carboxyl group, the monomer which has an amide group, the

monomer which has an amino group, the monomer which has a PIRORIDO ring are raised. As a monomer which has a hydroxyl group, hydroxyalkyl (meta) acrylate, such as 2-hydroxyethyl (meta) acrylate and 2-hydroxypropyl (meta) acrylate, is raised, for example. As a monomer which has a carboxyl group, monoalkyl malate, such as alpha, such as an acrylic acid and a methacrylic acid, beta unsaturated carboxylic acid, and buthylmalate, a maleic acid, a fumaric acid, a crotonic acid, etc. are raised, for example. It is used like [a maleic anhydride] a maleic acid. As a monomer which has an amide group, N-alkoxy methyl (meta) acrylamides, such as alkyl (meta) acrylamides, such as - dimethyl (meta) acrylamide, and N'N, N'-diethyl (meta) acrylamide, butoxy methylacrylamide, and ethoxy methylacrylamide, diacetone acrylamide, etc. are raised, for example (meta). [acrylamide, N, and] Dimethylamino ethyl acrylate is raised as a monomer which has an amino group. An N-vinyl-2-pyrrolidone is raised as a monomer which has a pyrrolidone ring.

[0025] Moreover, copolymerization of the copolymerization nature monomer which does not have a functional group further may be carried out to the above-mentioned copolymer, and vinyl acetate, styrene, alpha methyl styrene, a vinyl chloride, acrylonitrile, ethylene, a propylene, a butadiene, etc. are raised to it as a copolymerization nature monomer, for example. It is desirable that alkyl (meta) acrylate contains 50% of the weight or more as a polymerization (**) component in a binder.

[0026] A polyfunctional monomer may be further added by the acrylic binder if needed. By addition of this polyfunctional monomer, bridge formation arises between the polymers to generate and, thereby, the internal cohesive force of a binder increases. Therefore, the so-called paste remaining phenomenon at the time of exfoliation is improved almost regardless of the description and the sweat rate of the skin which were stuck. And addition of this polyfunctional monomer does not have a bad influence on the emission nature or low skin irritation of a drug at all. As such a polyfunctional monomer, although di (meth)acrylate, Tori (meta) acrylate, tetrapod (meta) acrylate, etc. are raised, it is not limited to this, for example. The hexamethylene GURIKORUJI (meta) acrylate which is made to combine polymethylene glycols and acrylic acids (meta), such as hexamethylene glycol and an octamethylene glycol, and is more specifically obtained, Di(meth)acrylate, such as octamethylene GURIKORUJI (meta) acrylate, The di(meth)acrylate which is made to combine polyalkylene glycols and acrylic acids (meta), such as a polyethylene glycol and a polypropylene glycol, and is obtained, Tetrapod (meta) acrylate, such as Tori (meta) acrylate, such as TORIMECHI roll pro pantry (meta) acrylate and GURISERINTORI (meta) acrylate, and pentaerythritol tetrapod (meta) acrylate, is raised. Two or more sorts of these polyfunctional monomers may be added. The addition of a polyfunctional monomer is 0.5 or less % of the weight in [all / with which manufacture of a binder is presented preferably] a monomer.

[0027] Moreover, tackifiers, such as rosin system resin, polyterpene resin, coumarone-indene resin, petroleum system resin, and terpene-phenol resin, may be added by the acrylic binder if needed.

[0028] As a rubber system binder, natural rubber, a styrene-isoprene styrene block copolymer, A styrene-butadiene-styrene block copolymer, a styrene-olefin-styrene block copolymer, In the rubber elasticity object 100 weight sections, such as polyisoprene, polybutene, a polyisobutylene, and an ethylene-vinylacetate copolymer For example, rosin system resin, polyterpene resin, coumarone-indene resin, The 20 - 200 weight section and the need are accepted in tackifiers, such as petroleum system resin and terpene-phenol resin. The thing which comes to carry out optimum dose addition of the antioxidants, such as bulking agents, such as softeners, such as a liquid paraffin, liquefied polybutene, mineral oil, lanolin, liquefied polyisoprene, and liquefied polyacrylate, and titanium oxide, and butylhydroxytoluene, etc. is raised.

[0029] As a silicone system binder, what uses poly dimethylsiloxane etc. as a principal component is raised.

[0030] In the above-mentioned binder, a plasticizer, a bulking agent, an antioxidant, etc. may be added if needed.

[0031] The drug B used by this invention 2 is a drug more than a kind chosen from the group which consists of l-menthol, dl-camphor, peppermint oil, spearmint oil, and mentha oil.

[0032] The above-mentioned peppermint oil is Peppermint (the eleventh amendment Japanese pharmacopoeia explanatory, D-737) Mentha. piperita It is ****** which carried out steam distillation of

the fresh terrestrial part which the flower of Linne attached, and obtained it.
[0033] The above-mentioned spearmint oil is Mentha. vividis or Mentha It is ****** which carried out steam distillation and which was obtained from the part which has come out to the fresh ground of **** of cardiaca.
[0034] The above-mentioned mentha oil is a mentha herb (the eleventh amendment Japanese pharmacopoeia explanatory, D-734) Mentha. arvensis Linne It is the essential oil from which the oil which carried out steam distillation of the terrestrial part of var.Malinvaud or its species hybrid, and obtained it was cooled, and solid content was removed.
[0035] Since too many above-mentioned drugs B will produce a skin stimulus of erythema etc. if it may be added independently and it may be added by two or more sorts, the sleepiness prevention effectiveness will not be acquired if there are too few the additions, and there are, they are 1 - 60 weight section to the binder 100 weight section, and are 5 - 30 weight section preferably.
[0036] The drug C used by this invention 2 is a drug more than a kind chosen from the group which consists of capsici fructus, cantharides, a ginger, turpentine oil, a nonylic acid WANIRIRU amide, and capsaicin, and has local irritant action and a skin temperature rise operation.
[0037] The above-mentioned capsici fructus is capsici fructus (the eleventh amendment Japanese pharmacopoeia explanatory, D-653) Capsicum. annuum They are the fruits of Linne or its variety (Solanaceae).
[0038] The above-mentioned cantharides dry a bean blister beetle.
[0039] The above-mentioned ginger is Ginger (the eleventh amendment Japanese pharmacopoeia explanatory, D-449) Zingiber. officinale (Zingiberaceae) It is a rhizome.
[0040] The above-mentioned capsici fructus, cantharides, and a ginger may be used as tincture, extracts, and powder.
[0041] Since it will produce a skin stimulus of erythema etc. if it may be added independently and it may be added by two or more sorts, the above-mentioned drug C cannot fully improve the torpor of consciousness if there are too few the additions, but there are, it is 0.05 - 10 weight section to the binder 100 weight section, and is 0.1 - 5 weight section preferably. [too many]
[0042] The binder constituent 2 with which the binder constituent 1 with which the patches of this invention 2 consist of the above-mentioned binder and a drug B becomes what was applied to one side of a base material from the above-mentioned binder and Drug C is applied.
[0043] The binder constituent 2 is applied by 1 - 80% of surface ratio to the binder constituent 1 on the base material with which the binder constituent 1 was applied, or the binder layer which consists of a binder constituent 1, and is preferably applied by 20 - 60% of surface ratio.
[0044] For applying the above-mentioned binder constituents 1 and 2, the manufacture approach of the usual adhesive tape is applicable. The example of representation is a solvent coating method, and a hot melt coating method, an electron ray hardening emulsion coating method, etc. are used besides this. In order to carry out the laminating of whether the binder constituents 1 and 2 are distinguished with a solvent coating method For example, l-menthol, dl-camphor, peppermint oil, spearmint oil, Make a suitable solvent dissolve thru/or distribute mentha oil, and the obtained solution thru/or dispersion liquid is added to a binder. The binder constituent 1 is created, it applies to one side of a base material, and it is dried. Next, capsici fructus, Make a suitable solvent dissolve thru/or distribute cantharides, a ginger, turpentine oil, a nonylic acid WANIRIRU amide, and capsaicin, add the obtained solution thru/or dispersion liquid to a binder, and the binder constituent 2 is created. It applies on the binder layer which consists of a base material top with which the binder constituent 1 was applied, or a binder constituent 1. It is made to apply and dry on the approach of drying, or binder constituent 1 releasing paper, and the binder constituent 2 is applied and dried on the releasing paper with which the binder constituent 1 was applied, and the approach which a base material is made to stick is raised. Moreover, the binder constituent 2 may be stuck to a base material, after making it once apply and dry on a releasing paper.
[0045] Although the thickness of the binder layer of the patches created by the above-mentioned approach changes with purposes of use, it is 10-200 micrometers preferably.
[0046] The binder constituents 1 and 2 distinguish by different color with, and there are the shape of a

stripe, band-like, punctate, etc. as a condition, for example.
[0047] What achieves the duty which gives self-support nature to tape pharmaceutical preparation as a base material of the above-mentioned tape pharmaceutical preparation although it is flexible, and prevents the vaporization of the drug in a binder layer and shift is used suitably. As a material of a base material, cellulose acetate, ethyl cellulose, polyethylene terephthalate, a plasticization vinyl acetate-vinyl chloride copolymer, nylon, an ethylene-vinylacetate copolymer, a plasticization polyvinyl chloride, polyurethane, polyethylene, a polyvinylidene chloride, aluminum, etc. are raised, for example. These materials are used as the sheet thru/or film of a monolayer, or a layered product of two or more sheets. Materials other than aluminum may be used as textile fabrics or a nonwoven fabric. What consists of a material which has flattery nature to a skin side as a base material is used suitably, and the laminate film of polyurethane, polyethylene terephthalate, and an ethylene-vinylacetate copolymer is especially desirable. The thickness of a base material is 5-100 micrometers preferably.
[0048] Patches usually equip the pasting side with the releasing paper, in order to protect the adhesive basis layer front face till use. Although the thing which comes to carry out siliconizing of polyethylene terephthalate, polyester film, a polypropylene film, polyethylene coat paper of fine quality, polyethylene coat glassine, and the polyolefine coat glassine as a releasing paper is used well, a releasing paper is not limited to this. 1000 micrometers or less of thickness of a releasing paper are 20-200 micrometers preferably.
[0049] The obtained patches are stuck on the perimeter of a frame and an eye, the tempora, etc.
[0050]
[Example] Next, the example of this invention is explained. In addition, that it is with the "section" below means the "weight section." Moreover, the appraisal method about the sleepiness prevention trial shown in the result and a spreading trial is as follows.
[0051] The test piece (area 3.14cm2) of spreading or patches was stuck for the test piece (weight of 10mg) of external preparations on six sleepiness prevention trial healthy persons' frame, and the next three-stage judging estimated the effectiveness of 0.5, 1 and 1.5, and 2 or 2.5 hours after.
0: There is the moderate feeling of a stimulus to a menthol smell and the skin, and prevent sleepiness.
1: Although there is almost no menthol smell, there is the moderate feeling of a stimulus to the skin, and prevent sleepiness slightly.
2: There is no moderate feeling of a stimulus to a menthol smell and the skin, and don't prevent sleepiness.
[0052] The following three-stage estimated the feeling of use after spreading of the external preparations of a spreading trial sleepiness prevention trial.
O : there is no feeling of stickiness and it is easy to use it.
: A coat formation compound melts, it uses [there is the remainder, and] it, and it is ****.
x: Use it, sensing stickiness and it is ******.
[0053] Examples 1-13, the example 1 of a comparison - 7 carboxyl MECHIRUSERU cellulose sodium (whenever [permutation / of the Daicel Chemical Industries, Ltd. make the CMC die cel 1120, and a hydroxyl group] is 0.6-0.8), methyl cellulose (the Shin-Etsu Chemical Co., Ltd. make, METOROZU SM-25) and hydroxyethyl cellulose (made in FUJI Chemical --) HECAL-15 and hydroxypropylcellulose (the Nippon Soda Co., Ltd. make --) HPC-H and the hydroxypropyl methylcellulose (the Shin-Etsu Chemical Co., Ltd. make --) METOROZU 65SH-400 and polyvinyl alcohol (the Shin-Etsu Chemical Co., Ltd. make --) whenever [Shin-etsu poval PA-05 and saponification] -- 88, a degree of polymerization 600, and a polyvinyl pyrrolidone (the BASF Japan, Ltd. make --) Kollidon K-25, molecular weight 2500, or a carboxyvinyl polymer (the Wako Pure Chem make --) The high bis-WAKO 105 100 section, the l-menthol of the specified quantity shown in Tables 1 and 2, Dl-camphor, turpentine oil (Takasago perfume company make), HEPA mint oil (Takasago perfume company make) spearmint oil (the Ogi Pharmaceuticals company make), mentha oil (the Ogi Pharmaceuticals company make), and aqueous intermediation mixed liquor were supplied to the SEBARA bull flask, the stirring dissolution was carried out for 30 minutes at 25 degrees C, and external preparations were obtained. Example of comparison 8 SUTIKU type external preparations (the S.T. Chemical CO., LTD. make,

sleep non R) were purchased.

[0054]

[Table 1]

		実施例												
		1	2	3	4	5	6	7	8	9	10	11	12	13
被膜形成化合物	カルボキシルメチルセルロースナトリウム	100	100	100	100	100	–	–	–	–	–	–	–	–
	メチルセルロース	–	–	–	–	–	100	–	–	–	–	–	–	–
	ヒドロキシエチルセルロース	–	–	–	–	–	–	100	–	–	–	–	–	–
	ヒドロキシプロピルセルロース	–	–	–	–	–	–	–	100	–	–	–	–	–
	ヒドロキシプロピルメチルセルロース	–	–	–	–	–	–	–	–	100	–	–	–	100
	ポリビニルアルコール	–	–	–	–	–	–	–	–	–	100	–	–	–
	ポリビニルピロリドン	–	–	–	–	–	–	–	–	–	–	100	–	–
	カルボキシビニルポリマー	–	–	–	–	–	–	–	–	–	–	–	100	–
薬物A	l－メントール	100	50	47	34	67	34	34	34	34	34	34	34	34
	dl－カンフル	67	33	20	17	50	17	17	17	17	17	17	17	17
	テレビン油	33	17	13	34	17	34	34	34	34	34	34	34	34
ペパーミント油		–	25	–	–	–	–	–	–	–	–	–	–	–
ハッカ油		–	–	–	17	–	17	17	17	17	17	17	17	17
スペアミント油		–	–	–	–	17	–	–	–	–	–	–	–	–
水溶媒混液	水	1820	865	292	880	850	880	880	880	880	880	880	880	880
	エタノール	1213	577	195	587	567	587	587	587	587	587	587	587	440
	イソプロパノール	–	–	–	–	–	–	–	–	–	–	–	–	147
	水／エタノール	3/2	3/2	3/2	3/2	3/2	3/2	3/2	3/2	3/2	3/2	3/2	3/2	3/2

[0055]

[Table 2]

		比較例						
		1	2	3	4	5	6	7
カルボキシメチルセルロースナトリウム		100	100	100	100	100	100	100
薬	l－メントール	110	42	25	125	63	63	75
	dl－カンフル	60	26	17	83	42	42	–
	テレビン油	30	12	8	42	21	21	–
水溶媒混液	水	11820	132	910	790	433	1298	1395
	エタノール	7880	88	607	527	1009	144	930
	水／エタノール	3/2	3/2	3/2	3/2	3/7	9/1	3/2

[0056] About the obtained external preparations and the purchased external preparations, the sleepiness prevention trial and the spreading trial were performed, and the result was shown in Table 3.
[0057]
[Table 3]

		眠気防止試験				塗布試験
		経過時間（時間）				
		0．5	1	1．5	2	
実施例	1	0	0	1	2	○
	2	0	0	0	1	○
	3	0	0	0	1	○
	4	0	0	1	2	○
	5	0	0	0	0	○
	6	0	0	1	2	○
	7	0	0	1	2	○
	8	0	0	1	2	○
	9	0	0	1	2	○
	10	0	0	1	2	○
	11	0	0	1	2	○
	12	0	0	1	2	○
	13	0	0	1	2	○
比較例	1	1	2	2	2	○
	2	0	0	1	2	×
	3	2	2	2	2	○
	4	*	−	−	−	−
	5	0	0	1	2	△
	6	0	0	1	2	×
	7	0	2	2	2	○
	8	1	2	2	2	×

＊：1分以内に強度な刺激。

[0058] the synthetic 2-ethylhexyl acrylate 302 section of a binder, the N-vinyl-2-pyrrolidone 98 section,

the hexamethylene glycol dimethacrylate 0.04 section, and the ethyl-acetate 400 section -- a SEBARA bull flask with stirring equipment and a cooling system -- supplying -- stirring -- and the temperature up was carried out to 60 degrees C, carrying out a nitrogen purge. The solution which dissolved the lauroyl peroxide 2 section in the cyclohexane 100 section was divided into ten, the 1 was added in the SEBARA bull flask, and the polymerization was started. 19 of the remainder was added with one time interval from the 5th hour after reaction initiation, and it reacted after addition termination for further 19 hours. In addition, it added ethyl acetate at a time 50-section 5 times every 5 hours after reaction initiation for viscosity accommodation. After reaction termination, it cooled, and ethyl acetate was added so that solid content concentration might become 35% of the weight.

[0059] The binder of the specified quantity shown in examples 14 and 16, the example 9 of a comparison, and 11 to 13 tables 4 and 5, l-menthol, dl-camphor, turpentine oil (Takasago perfume company make), HEPA mint oil (Takasago perfume company make) spearmint oil (the Ogi Pharmaceuticals company make), mentha oil (the Ogi Pharmaceuticals company make), capsici fructus extractives (Japanese dry-chemicals company make), the Qantas tincture (the Ogi Pharmaceuticals company make), a powdered ginger (the Ogi Pharmaceuticals company make), a nonylic acid WANIRIRU amide, and capsaicin (the Ogi Pharmaceuticals company make) were supplied to the desolver, it mixed to homogeneity, and the binder constituents 1 and 2 were obtained. The obtained binder constituent 1 was applied on the whole surface of the polyethylene terephthalate film (thickness of 40 micrometers) by which siliconizing was carried out, it dried for 30 minutes at 60 degrees C, and the binder layer 1 with a thickness of 60 micrometers was formed. Next, the obtained binder constituent 2 was applied to band-like [with a width of face of 10mm] at intervals of 10mm at intervals of band-like [with a width of face of 5mm] or 10mm on another polyethylene terephthalate film (thickness of 40 micrometers) by which siliconizing was carried out, it dried for 30 minutes at 60 degrees C, and the band-like binder layer 2 with a thickness of 60 micrometers was formed. The binder layer 1 was imprinted on the polyurethane film with a thickness of 50 micrometers, the polyethylene terephthalate film was removed, the imprint laminating of the binder layer 2 was carried out on the binder layer 1, and the patches of the surface ratio shown in Tables 4 and 5 were obtained.

An example 15 and the binder constituents 1 and 2 obtained 17-20 are applied to the whole surface of the polyethylene terephthalate film (thickness of 40 micrometers) by which siliconizing was carried out to width of face of 10mm, and band-like [of 5mm], respectively, and it dries for 30 minutes at 60 degrees C. The band-like binder layer 1 with a thickness of 60 micrometers and the binder layer 2 were formed by width of face of 10mm, and 5mm, respectively, and the patches of the surface ratio which imprinted on the polyurethane film with a thickness of 50 micrometers next, and was shown in Tables 4 and 5 were obtained.

[0060] The binder of the specified quantity shown in example of comparison 10 table 5, Drug B, and Drug C were supplied to the desolver, it mixed to homogeneity, and mixture was obtained. The obtained mixture was applied on the polyethylene terephthalate film (thickness of 40 micrometers) by which siliconizing was carried out, and the whole surface, it dried for 30 minutes at 60 degrees C, the binder layer with a thickness of 60 micrometers was formed, then, it imprinted on the polyurethane film with a thickness of 50 micrometers, and patches were obtained.

[0061]

[Table 4]

		実施例																			
		14		15		16		17		18		19		20							
		1	2	1	2	1	2	1	2	1	2	1	2	1	2						
粘着剤層		100	100	100	100	100	100	100	100	100	100	100	100	100	100						
粘着剤（固形分）		100	100	100	100	100	100	100	100	100	100	100	100	100	100						
薬剤B	l－メントール	7.5	—	15	—	15	—	—	—	—	—	—	—	5	—						
	d l －カンフル	—	—	—	—	5	—	—	—	—	—	—	—	—	—						
	ペパーミント油	—	—	—	—	—	—	15	—	—	—	—	—	—	—						
	スペアミント油	—	—	—	—	—	—	—	—	15	—	—	—	—	—						
	ハッカ油	—	—	—	—	—	—	—	—	—	—	15	—	15	—						
薬剤C	トウガラシエキス	—	1	—	—	—	1.5	—	—	—	—	—	—	—	12						
	カンタリスチンキ	—	—	—	—	—	—	—	1	—	—	—	—	—	—						
	ショウキョウ末	—	—	—	—	—	—	—	—	—	1	—	3	—	—						
	テレビン油	—	—	—	—	—	—	—	—	—	—	—	—	—	—						
	ノニル酸ワニリルアミド	—	—	—	1.5	—	—	—	—	—	—	—	—	—	—						
	カプサイシン	—	—	—	—	—	—	—	—	—	—	—	—	—	0.2						
粘着剤層2／粘着剤層1×100(%)（注）		50		50		50		50		50		50		50							

（注）皮膚接触面上での面積。

[0062]
[Table 5]

		比較例								
		9		10	11		12		13	
粘着剤層		1	2	−	1	2	1	2	1	2
粘着剤（固形分）		100	100	100	100	100	100	100	100	100
薬剤B	l−メントール	0.5	−	7.5	62	−	7.5	−	7.5	−
薬剤C	トウガラシエキス	−	0.1	1	−	1	−	12	−	1
粘着剤層2／粘着剤層1×100(%)（注）		50		−	50		50		100	

（注）皮膚接触面上での面積。

About the obtained patches, the sleepiness prevention trial was performed and the result was shown in Table 6.

[0063]

[Table 6]

		眠気防止試験				
		経過時間（時間）				
		0．5	1	1．5	2	2．5
実施例	14	0	0	1	2	2
	15	0	0	0	1	2
	16	0	0	0	0	1
	17	0	0	0	1	2
	18	0	0	0	1	2
	19	0	0	0	1	2
	20	0	0	0	0	1
比較例	8	1	2	2	2	2
	9	2	2	2	2	2
	10	0	1	2	2	2
	11	*	−	−	−	−
	12	*	−	−	−	−
	13	0	1	2	2	2

＊：1分以内に強度な刺激。

[0064]

[Effect of the Invention] The external preparations of this invention consist of the coat formation compound, water, and alcohol more than a kind chosen from the group which consists of carboxymethylcellulose sodium, methyl cellulose, hydroxyethyl cellulose, hydroxypropylcellulose, the hydroxypropyl methylcellulose, polyvinyl alcohol, a polyvinyl pyrrolidone, and a carboxyvinyl polymer, and this alcohol is the mixed solvent of ethanol, isopropanal PANORU or ethanol, and isopropanol. Since water / solvent solvent consists of a drug A which consists of the solvent mixture which are 0.7-4 in a weight ratio, l-menthol, dl-camphor, and turpentine oil, there is no stickiness after spreading, it excels in a feeling of use, and durability is high. The patches of this invention 2 on one side of a base material A binder, and l-menthol, dl-camphor, The binder constituent 1 which consists of a drug B more than a kind chosen from the group which consists of peppermint oil, spearmint oil, and mentha oil is applied. Since the binder constituent 2 which consists of a drug C more than a kind chosen from the group which consists of a binder, capsici fructus, cantharides, a ginger and turpentine oil, a nonylic acid WANIRIRU amide, and capsaicin to this binder constituent 1 is applied by 1 - 80% of surface ratio It excels in a feeling of use and durability is high.

[Translation done.]